

The Investigation of Protein A and Salmonella Antibody Adsorption onto Biosensor Surfaces by Atomic Force Microscope

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Protein A is a cell wall protein produced by most strains of *Staphylococcus aureus* and is used for immobilization of antibodies because of the high stability of the gold-protein A complex. The investigation of Protein A and antibody adsorption on the biosensor surfaces is an important and fundamental step for increasing biosensor sensitivities. AFM has been used to characterize the stages of biosensor development which are protein A and antibody adsorption onto a gold quartz crystal. The attachment of antibodies was verified from the measurement of height and roughness. Also, it was found that the antibodies do not completely cover the protein A layer due to an island growth mechanism. Salt crystals and water trapped under the protein A layer were also observed, which can lower the biosensor sensitivities. The uneven adsorption of antibodies onto the biosensor surface might lead to a decrease in the sensitivity.